BOGORODITSKIY, Nikolay Petrovich; VOLOKOBINSKIY, Yuriy Mikhaylovich; VOROB'YEV, Aleksandr Akimovich; TAREYEV, Boris Mikhaylovich; RENNE, V.T., retsenzent; VOLOP'YANOV, K.K., retsenzent; KAZARNOVSKIY, D.M., nauchn. red.; PAVLOVA, L.S., red.

[Theory of dielectrics] Teoriia dielektrikov. Moskva, Energiia, 1965. 344 p. (MIRA 18:12)

VOLOKITIN, I.

People of fourth in arms. Oznakh. sv. 22 no.2:12-13 Ap '65.
(MIRA 18:3)

VOLOKITIN, I.; GOL'TSOV, V.; YEREMIN, S.; SIMENOV, M.

Facts, events, people. Kryl. rod. 16 no.3:20-21 Mr '65.
(MIRA 18:5)

1. Spetsial'nyye korrespondenty zhurnala "Grazhdanskaya aviatsiya" (for Volokitin, Gol'tsov).

VOLOKITIN, I.; MALANCHEV, L.

Five steps above the earth. Grazhd. av. 21 no.6:8-9 Je '64.
(MIRA 17:8)

VOLOKITIN, I.; VDOVENKO, B.

Wings are strengthened in flight. Grazhd.av. 20 no.11:2 of cover 1-3 N '63. (MIRA 17:2)

1. Spetsial'nyye korrespondenty zhurnala "Grazhdanskaya aviatsiya".

VOLOKITIN, I.; MALANCHEV, L.

When first violins play out of tune. Grazhd. av. 20 no.10: 30-31 O '63. (MIRA 16:12)

1. Spetsial'nyye korrespondenty zhurnala "Grazhdanskaya aviatsiya."

VOLOKITIN, I.

"Chaika" and "IAstreb" came to Moscow. Grazhd.av. 20 no.7:16-17 Jl '63. (MIRA 16:9)

1. Spetsial'nyy korrespondent zhurnala "Grazhdanskaya aviatsiya".
(Tereshkova, Valentina Vladimirovna)
(Bykovskii, Valerii Fedorovich)

VOLOKITIN, I.; GOL'TSOV, V.

Stormy front. Grazhd. av. 20 no.3:4-5 Mr '63. (MIRA 16:4)

(Air pilots)

VOLOKITIN, S. N.

Feeding rations for domestic fowl
Voronezh, 1948. 49 p.

I. Poultry - Feeding and feeding stuffs.

84-58-2-7/46

AUTHOR: Volokitin, Yu.

TITLE: A Young Plane Commander (Molodoy komandir korablya)

PERIODICAL: Grazhdanskaya aviatsiya, 1958, Nr 2, p 5 (USSR)

ABSTRACT: This is a short poem, conveying the impressions of a pilot in flight and exalting the importance of his mission.

AVAILABLE: Library of Congress

1. Literature - USSR 2. Pilots - USSR

Card 1/1

L 22649-66 EWT(1)/FCC GW

ACC NR: AT6008757 SOURCE CODE: UR/2789/65/000/062/0078/0096

AUTHOR: Volokitina, L. A.; Demidova, Ye. I.; Maklakova, N. A.

ORG: none

TITLE: Dependence of variability of meteorological elements on circulation

SOURCE: Tsentral'naya aerologicheskaya observatoriya. Trudy, no. 62, 1965. Voprosy izmenchivosti vetra i drugikh elementov tsirkulyatsii v atmosfere (Problems of the variability of wind and other elements of atmospheric circulation), 78-96

TOPIC TAGS: atmospheric circulation, troposphere, stratosphere, wind speed, wind direction, relative humidity, atmospheric temperature, atmospheric pressure

ABSTRACT: This paper (an extension of earlier papers by Zavarina, Gandin, Matveyev, Reshetov, Selezneva, Yudin, and others which dealt with the statistical and/or theoretical aspects of problems relating to the variability of meteorological elements in the atmosphere), investigates the possibilities for determining the time-wise variabilities in pressure, temperature, relative humidity, and wind direction and speed in relation to atmospheric circulation conditions. The 12-hr arithmetic mean differences of these meteorological elements, calculated from observations made by the Central Aerological Observatory during the 1961—1962 period, were used as the basic data. Variability calculations were made for conditions existing at heights of 0, 5, 10, 15, and 20 km for each month separately on the basis of 30 difference

Card 1/3

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values, and for smoothed differences averaged on the basis of 120 values. Results of these calculations are presented in tabular form in the paper and indicate the existence of certain atmospheric conditions and relationships to atmospheric circulation. Annual changes in the variability of meteorological elements (maximum variability of wind speed, temperature, and pressure in the winter in the troposphere and minimum variability in the summer) are almost nonexistent in the stratosphere. The anomalously large variabilities in wind speed, temperature, relative humidity, and pressure are related to cyclonic circulation, expressed by anomalously low pressure at ground level and in the troposphere. Anomalously small variabilities of these elements are associated with diffuse high-pressure fields in the atmosphere which are not indicated by mean pressure anomalies. The maximum variability of wind direction is directly associated with the development of anticyclones and is observed during anticyclonic circulation which is stronger near the ground but weaker above the troposphere and where the centers of the anticyclones migrate slowly, circulating in a region 500 x 500 km. In most cases, these anomalies extend upward for not less than 5 km, the pressure variability anomalies occurring entirely in the troposphere in 60% of the cases, and for temperature anomalies extend up to a height of 20 km in 40% of the cases. Maximum anomalies are variabilities of pressures with centers located in the troposphere, and of temperatures with centers in the upper troposphere. Vertically, wind speed and direction variability anomalies are largest when the centers are at altitudes of about 15 km; relative humidity variabilities are largest at altitudes of 10—15 km. In the troposphere, pressure variability increases with a change from anticyclonic to cyclonic circulation. At all altitudes, wind-speed

Card 2/3

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ACC NR: AT6008757

variability is much greater during cyclonic circulation than it is in anticyclonic circulation. In the lower stratosphere (15—20 km), pressure variability tends to increase during anticyclones and decrease during cyclones. Temperature variability at the earth's surface is reduced by 40—50% when the mean monthly pressure fluctuates by ±10 mb, either up or down. In cases of intense or stable cyclones and anticyclones which cause, on the average, deviations of ±10 mb from the monthly norm, the relative humidity variability is about 40% less than it is when the pressure averages are close to the norm, and it depends on the genesis of anticyclones and cyclones during the month. Temperature and relative humidity variability decreases with an increase in the mean monthly pressure, i.e., it is somewhat less for anticyclones than it is for cyclones. Orig. art. has: 6 formulas, 4 figures, and 8 tables. [ER]

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 006/ ATD PRESS: 4216

Card 3/3

VOLOKITINA, N. A.

VOLOKITINA, N. A. -- "Investigation of the Relation of the Durability of Cartons to Cohesion of the Fibrous Elements in Their Structure." Sub 30 Dec 52, Moscow Technological Inst of Light Industry Imeni L. M. Kaganovich. (Dissertation for the Degree of Candidate in Technical Sciences.)

SO: VECHERNAYA MOSKVA, January-December 1952

1. VOLOKITINA, N. A.; VOYNICHIY, S. S.; ZAICHENKOVSKIY, A. D.

2. USSR (600)

4. Paper - Testing

7. Length of fibers as a determinant of the strength of sheets of paper and cardboard. Bum. prom. 27, No. 9, 1952

9. Monthly List of Russian Accessions, Library of Congress, February 1953. Unclassified.

VOLOKITINA, ENG. N. A. - VOINTSKIY, DR. S. S. - ZAYCHICHKOVSKIY, DR. A. D.

Paper - Testing

Effect of the degree of grinding the fiber upon some properties of paper or paperboard in moist condition. Bum. prom. 28 no. 3, 1953

9. Monthly List of Russian Accessions, Library of Congress, May 1953, Unclassified.

VOLOKITINA, N.A.

Chemical Abst.
Vol. 48
Apr. 10, 1954
Cellulose and Paper

The influence of the hydrophobic surface of fibers on the properties of paper pulps. [illegible] Volokitina and [illegible]. Bumazh. Prom. 28, No. 12, 6-9(1953).—The effect of blocking OH groups in cellulose with 1-(octadecyloxymethyl)pyridinium chloride (I) on the properties of paper prepd. from cellulose was studied. Cotton batting was beaten to 90° Schopper-Riegler, and 3 sets of handsheets were prepd.: (a) untreated; (b) from an aq. suspension of a contg. 10% II (based on bone-dry fiber); (c) from an aq. suspension of a contg. 20% I. The aq. suspension a was prepd. by triturating cellulose with NaOAc in H_2O to 10-12% solids. The hand sheets were air-dried and pressed 3 min. at 120°. The d. (g./cc.) and tensile strength (kg./sq. cm.) were 0.83 and 2.97 for a; 0.80 and 1.68 for b, and 0.78 and 0.72 for c. The liquid absorbed (cc./g.) and tensile strength upon immersion of a, b, and c for 2 hrs. in H_2O were: 0.88 and 0.47, 0.5 and 0.50, and 0.41 and 0.28; in EtOH, 0.38 and 1.40, 0.56 and 0.63, and 0.54 and 0.29; in C_6H_6, 0.11 and 2.60, 0.44 and 1.20, and 0.43 and 0.61, resp.; corresponding values for 24 hr. immersion in H_2O were 0.91 and 0.48, 0.74 and 0.50, and 0.59 and 0.24; in EtOH 0.53 and 1.30, 0.63 and 0.52, and 0.62 and 0.28; and in C_6H_6 0.19 and 2.41, 0.52 and 1.20, and 0.50 and 0.75. The % swelling after immersion for 24 hrs. in H_2O, EtOH, and C_6H_6 for a was 98.0, 26.0, and —; for b 82.5, 25.5, and 1.5, and for c 65.8, 34.3, and 4.5. When the samples were immersed for a time sufficient to absorb approx. the same amt. of liquid, the liquid absorbed and the tensile strength for a, b, and c in H_2O were 0.46 and 2.20, 0.44 and 1.29, and 0.41 and 0.54; in EtOH 0.43 and 2.62, 0.40 and 1.17, and 0.43 and 0.57; and in C_6H_6 0.35 and 4.50, 0.34 and 2.25, and 0.36 and 1.31, resp. J. L. K.

Central Sci. Res. Inst Leather Substitute

LABUTIN, Vadim Konstantinovich; VOLOKOBINSKAYA, N.I., red.

[Oscillatory circuit tuned by a nonlinear capacitance] Kolebatel'nyi kontur, perestraivaemyi nelineinoi emkost'iu. Moskva, Izd-vo Energiia, 1964. 94 p. (MIRA 17:8)

24.7600
26.2532

40158
S/058/62/000/007/044/068
A061/A101

AUTHORS: Volokobinskaya, N. I., Galavanov, V. V., Nasledov, D. N.

TITLE: A study of galvanomagnetic phenomena in high-purity InSb

PERIODICAL: Referativnyy zhurnal, Fizika, no. 7, 1962, 30, abstract 7E229 (In collection: "Vopr. metallurgii i fiz. poluprovodnikov". Moscow, AN SSSR, 1961, 55 - 69)

TEXT: The conductivity (σ) and the Hall coefficient (R) have been studied in InSb of n-type and p-type conductivity and a carrier concentration of 10^{12} - 10^{18} cm^{-3} at temperatures (T) of 77 - 450°K and magnetic field intensities (H) of 50 - 25,000 oe. It is shown that R is independent of H in the region of intrinsic conductivity. The strong dependence of R on H in the transition region from impurity to intrinsic conductivity fits well the theory which allows for a great diversity of electron and hole mobilities in InSb. A strong dependence of σ and R on H has been discovered in the impurity region. In pure n-type specimens R diminishes by 3 to 8 times as H changes from 50 to 25,000 oe, and the change of σ in a 25,000-oe field amounts to 500 - 700%. It is noted that the high value of

Card 1/2

these effects does not fit the theory which allows for the scattering of electrons from the lattice acoustical vibrations and from impurity ions. In p-type InSb the dependence of R on H can be explained by the scattering of holes from impurity ions. In p-type InSb specimens of highest purity two impurity levels with activation energies of 0.02 and 0.09 ev have been detected. The forbidden band width, determined from the R(T)-function, is equal to 0.26 ev.

V. Ivanov-Omskiy

[Abstracter's note: Complete translation]

24.7400 (1137, 1164, 1454)

30950
S/576/61/000/000/007/020
E036/E162

AUTHORS: Volokobinskaya, N.I., Galavanov, V.V., and Nasledov, D.N.

TITLE: Investigation of galvano-magnetic phenomena in high purity InSb

SOURCE: Soveshchaniye po poluprovodnikovym materialam, 4th. Voprosy metallurgii i fiziki poluprovodnikov; poluprovodnikovyye soyedineniya i tverdyye splavy. Trudy soveshchaniya, Moscow, Izd.-vo AN SSSR, 1961. Akademiya nauk SSSR. Institut metallurgii imeni A.A. Baykova. Fiziko-tekhnicheskiy institut. 55-69

TEXT: InSb is a particularly convenient material to use in the study of galvanomagnetic effects in strong and weak fields, because the extremely high electron mobility of 10^5 - 10^6 cm^2/sec enables strong field conditions to be achieved for field intensities of ~10,000 oersted, which are available normally in the laboratory. p-type material behaves quite differently from n-type in a magnetic field, because the hole mobility is 20-100 times less than that of electrons. Studies in the transition region from impurity- to

Card 1/6

intrinsic-conduction will not only widen knowledge of the processes in InSb, but also contribute to the development of the theory of galvanomagnetic phenomena. In spite of this, no work has been reported on InSb with impurity concentrations below 10^{14} cm^{-3}, with the exception of a recent paper by E.H. Putley (Ref.11: Proc. Phys. Soc., 1959, Vol.73, 1, 128; 1959, Vol.12, 2, 280). In the present paper, results of measurements are reported on n- and p-type InSb with impurity concentrations from 10^{12} to 10^{18} cm^{-3}. The Hall constant and conductivity were determined in the range 77 to 450 °K for field strengths of 50 - 25,000 oe. The six p-type and eleven n-type samples, cut from zone-refined ingots, included both single and poly-crystalline samples. The apparatus for carrying out the measurements from 77 to 450 °K is very briefly described. The usual log R and log σ against I/T plots are given for the samples, where R is the Hall constant and σ the conductivity, T being the temperature in °K. Two p-type samples had a marked temperature dependence, unlike the others which, in the impurity conduction range, had a constant σ and R. The impurity atom activation energies determined for these

4

Investigation of galvano-magnetic ...

samples were 0.03 and 0.08 eV, of an order higher than those observed by other workers. The n-type samples show a smooth transition from impurity- to intrinsic conduction in the log R - I/T curves, whilst the p-type samples change sign and then increase rapidly in absolute value of R before decreasing slowly. In this latter region R for p-type samples is larger than R_i (the Hall constant for intrinsic samples), and for n-type samples it is smaller than R_i. Similarly in this temperature range (i.e. above the transition point) the conductivity of n-type samples is larger than, and that of p-type less than, σ_i, where σ_i is the electrical conductivity in the intrinsic range. This behaviour, which leads to an apparent difference in the energy gaps of n- and p-type samples, can be explained by the large mobility ratio of electrons and holes in InSb, as has been shown by V.V.Galavanov (Ref.14: Zh.tekhn.fiz., 1957, Vol.27, No.4, 651). With pure crystals far from the transition region, both n- and p-type sample Hall constants coincided with R_i over a fairly wide temperature range. Assuming degeneracy is absent, the energy gap can thus be found from the slope of log $(R_i T^{3/2})$ against I/T.

4

4

The value of 0.26 eV obtained agrees well with those quoted in the recent literature. Curves of magneto-resistance against 1/T show a maximum value of $\Delta\rho/\rho_o$, $\Delta\rho$ being the change in the resistivity ρ_o in a magnetic field, at a temperature near the transition from impurity- to intrinsic conduction. As the magnetic field H is increased, the maximum is displaced towards higher temperatures. The Hall constant depends strongly on the magnetic field in both the intrinsic- and impurity conduction ranges. The behaviour in the transition region has been extensively studied but the conduction region has not been investigated very thoroughly, especially at low impurity concentrations. Here, measurements at 77 °K are reported in detail. To avoid complications from the Nernst-Ettingshausen effect the samples were completely immersed in liquid nitrogen. One sample was measured up to 25,000 oe but the others up to only 8,500 oe. Magneto-resistance is also measured as a function of magnetic field at this temperature. $\Delta\rho/\rho_o$ proportional to H^2 only for H < 200 oe; for H ~500-2,000 oe the relation is linear; above 2,000 oe it approaches saturation. In a field of 8,500 oe the resistance change was 500-700%. Control experiments showed that the

Investigation of galvano-magnetic ...

variation of R and $\Delta\rho/\rho_0$ did not depend on surface condition or the magnitude of the current through the sample. The change in R with the field for p-type samples was significantly less than for n-type samples. For the transition region from impurity- to intrinsic conduction these results are in qualitative agreement with the theory for strong fields. Any peculiarities in behaviour are related to the mobility ratio and the fact that at 1000 oe the electrons are already in strong field conditions, whilst the holes are still in weak field conditions. The maximum in the $\Delta\rho/\rho_0$ curve against temperature for p-type samples is related to the predominance of low mobility holes below the transition point and of high mobility electrons above it. As the temperature increases further the mobility decreases to give a reduction in $\Delta\rho/\rho_0$. Theoretical difficulties do arise over the dependence of R and $\Delta\rho/\rho_0$ on H in the impurity conduction range. For p-type material the changes of R and $\Delta\rho/\rho_0$ do not exceed that predicted by theory, but for n-type the discrepancy is very large, the observed changes being markedly greater than expected. In pure n-type samples, R decreased 3 - 8 times, and changed by 500 - 700% for a change in H of 50 to 25,000 oe. Even for

Investigation of galvano-magnetic ...

p-type material the changes are observed at much smaller fields than expected from considerations of mobility, i.e. at $H \gtrsim 50$ oe instead of $H \gtrsim 10^3 - 10^4$ oe. These results lead to difficulties in determining carrier concentrations and mobility from Hall constant and conductivity measurements. The results are, however, regarded as preliminary and further investigation of surface treatment, crystal orientation in the magnetic field, etc. is required. There are 11 figures, 1 table and 20 references: 3 Soviet-bloc, 1 Russian translation from non-Soviet-bloc publication, and 16 non-Soviet-bloc. The four most recent English language references read as follows:

Ref.5: C. Hilsum, R. Baric. Proc. Phys. Soc., 1958, Vol.71, 460, 676.
Ref.6: C.H. Champness, J. Electronics Control, 1958, IV, 3, 201.
Ref.11: as in the text above.
Ref.20: H.P.R. Frederikse, W.R. Hosler. Phys. Rev. 1957, Vol.108, 5, 1136.

Card 6/

VOLOKOBINSKAYA, N.I.; GALAVANOV, V.V.; NASLEDOV, D.N.

Electric and galvanomagnetic properties of high-purity InSb. Fiz. tver.tela 1 no.5:755-760 My '59. (MIRA 12:4)

1. Leningradskiy fiziko-tekhnicheskiy institut AN SSSR.
(Indium antimonide)

BOGORODITSKIY, N.P.; VOLOKOBINSKIY, Yu. M.; FRIDBERG, I.D.

Electric properties of a dielectric with a variable number of relaxers. Dokl. AN SSSR 120 no. 3:487-490 My '58. (MIRA 11:7)

1. Leningradskiy elektrotekhnicheskiy institut im. V.I.Ul'yanova(Lenina). Predstavleno akademikom A.F.Ioffe.
(Dielectrics)

33130

9,2110 (1001,1153,1385)

S/105/61/000/012/004/006
E194/E455

AUTHORS: Bogoroditskiy, N.P., Doctor of Technical Sciences, Professor; Volokobinskiy, Yu.M., Candidate of Technical Sciences, Docent; Fridberg, I.D., Candidate of Technical Sciences

TITLE: A semi-graphical method of calculating the thermal breakdown voltage of high-frequency insulators

PERIODICAL: Elektrichestvo, no.12, 1961, 63-68

TEXT: A semi-graphical method is proposed to overcome the mathematical difficulties of calculating the thermal breakdown voltage of insulators and capacitors, particularly ceramics. It is assumed that K (the thermal conductivity of the dielectric), ε (its permittivity) and tan δ are given as simple functions of coordinates and temperature. In many practical cases the insulator can be represented as a sheet of material with a uniform electric field applied parallel to a face of the sheet. One side of the sheet is ideally thermally insulated and the other is exposed to air, so that heat flow is perpendicular to the surface and to the electric fields. An element of unit surface area within the insulator is considered. An expression is derived

A semi-graphical method of ...

for the heat evolved in this element and it is equated to an expression for the heat dissipated from the outer surface of the element in contact with air. A graph is plotted (Fig.4) of η as a function of temperature, where η differs from the electrical conductivity of the material by a constant factor and is given by the expression

$$\eta = \frac{\varepsilon \operatorname{tg} \delta f}{1.8 \cdot 10^{+6}} \quad (W/cm\ kV^2) \qquad (18)$$

where f is the frequency. From a point in the abscissus corresponding to ambient air temperature T_A, a tangent is drawn to intersect the curve at the point T^{*}. Then the temperature of the hottest point in the element at the instant of breakdown lies between T^{*} and T^{**} where $\psi = T^{*} - T_A$; $\Theta = (\lambda/K)D$ (λ - external heat transfer coefficient; D - thickness). A graph is then plotted of surface temperature T_n as a function of applied field strength E to find the point on the curve corresponding to the maximum surface temperature T_{nnp} (see Fig.5). Then the maximum surface temperature at breakdown T_{nnp} is

A semi-graphical method of ...

calculated within certain limits in a manner similar to that used to determine the maximum temperature in the specimen. The temperature difference between the hottest spot and the surface can then be determined within certain limits. The heat dissipated from unit surface at a voltage near to breakdown is found and then the electric field strength is determined that causes this amount of heat to be evolved, which is the value required to be found. The method can be applied to insulators that are air-cooled on both sides by considering them to be of half thickness; it can also be applied to cylindrical ceramic insulators in a uniform field provided the radius is great compared with the wall thickness. Its application to more difficult cases is discussed. A worked example on a simple case shows that the accuracy suffices for practical purposes. A number of general conclusions are drawn about the relationship between the variables involved in cases of thermal breakdown of this kind. . . . . M.I.Mantrov is mentioned in the article in connection with his contributions in this field. There are 6 figures and 11 references - all Soviet-bloc.

Card 3/4

33130
S/105/61/000/012/004/006
E194/E455

A semi-graphical method of ...

ASSOCIATION: Leningradskiy elektrotekhnicheskiy institut im. V.I.Ul'yanova (Lenina)
(Leningrad Electrotechnical Institute im. V.I.Ul'yanov (Lenin))

SUBMITTED: August 11, 1961

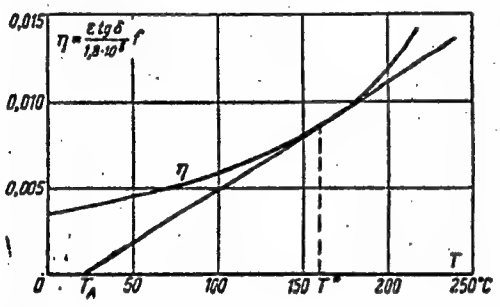


Fig.4.

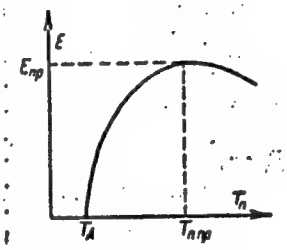


Fig.5.

Card 4/4

S/020/62/144/004/011/024
B125/B104

9,2000

AUTHORS: Bogoroditskiy, N. P., and Volokobinskiy, Yu. M.

TITLE: Theory of thermal breakdown of dipole dielectrics

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 144, no. 4, 1962, 766-769

TEXT: The authors calculate the field strength at which thermal breakdown occurs in insulators and capacitors, using a graphic-analytical method. If the specimens are small enough and if the alternating electric field is uniform the evolution of heat also is uniform. The breakdown field strength of the dipole dielectrics is $E_{br} = \sqrt{\lambda(T^* - T_A)S/\eta^* V}$ (5), where λ is the coefficient of external heat delivery which is assumed constant; T^* is the temperature of the unstable thermal equilibrium, T_A is the temperature of the surrounding air, η^* is the value of $\eta = \tan\delta \cdot f/1.8 \cdot 10^{12}$ at T^*, S is the surface area of the specimen and V is its volume. The breakdown voltage in a uniform field is $U_{br} = E_{br}L$, where L is the minimum inter-electrode distance. In an inhomogeneous field, the

Card 1/3

Theory of thermal breakdown ...

voltage at thermal breakdown is $U_{br} = \sqrt{\lambda(T^* - T_A)S/2\pi fC \tan\delta}$ (6), C and $\tan\delta$ being respectively the capacity and the tangent of the loss angle of the capacitor (insulator) at temperature T^*. The formulas (5) and (6) hold also for dielectrics with a weak relaxation polarization. In order to calculate the voltage at thermal breakdown for large insulators or capacitors the temperature distribution in the dielectric must be known. The breakdown field strength of a plane-parallel plate made of a dielectric with a distinct relaxation polarization is $E_{br} = (E' + E'')/2$ with

$$E' = \sqrt{\frac{4\lambda}{1+\lambda D/2K}\frac{(T^*-T_A)}{(\eta^*+\eta_m)D}}. \quad (12) \quad \text{and} \quad E'' = \sqrt{\frac{8\lambda}{4+\lambda D/2K}\frac{(T^*-T_A)}{\eta^* D}}. \quad (15).$$

This result either is accurate enough for practical purposes or can be used as a basis of numerical calculations. There are 3 figures.

ASSOCIATION: Leningradskiy elektrotekhnicheskiy institut im. V. I. Ul'yanova-Lenina (Leningrad Electrotechnical Institute imeni V. I. Ul'yanov-Lenin)

S/020/62/144/004/011/024
B125/B104

Theory of thermal breakdown ...

PRESENTED: January 18, 1962, by B. P. Konstantinov, Academician

SUBMITTED: January 15, 1962

Card 3/3

L 29962-65 EWT(m)/EWP(t)/EWP(b) IJP(c) JD/JG

ACCESSION NR: [illegible] S/[illegible] [illegible]

Volokobinskiy, Yu. M.

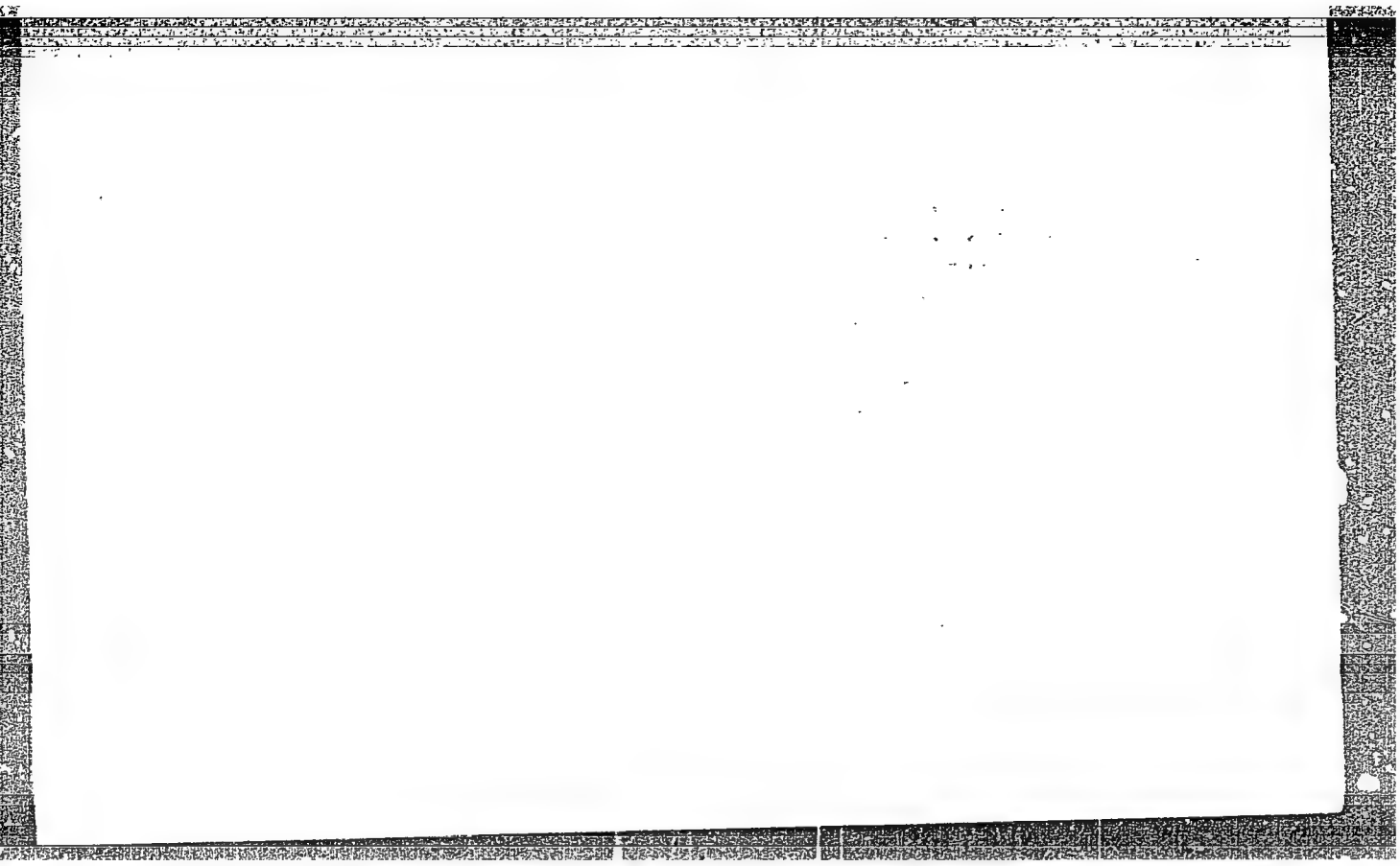
TITLE: Electrical properties of oxides of rare-earth elements

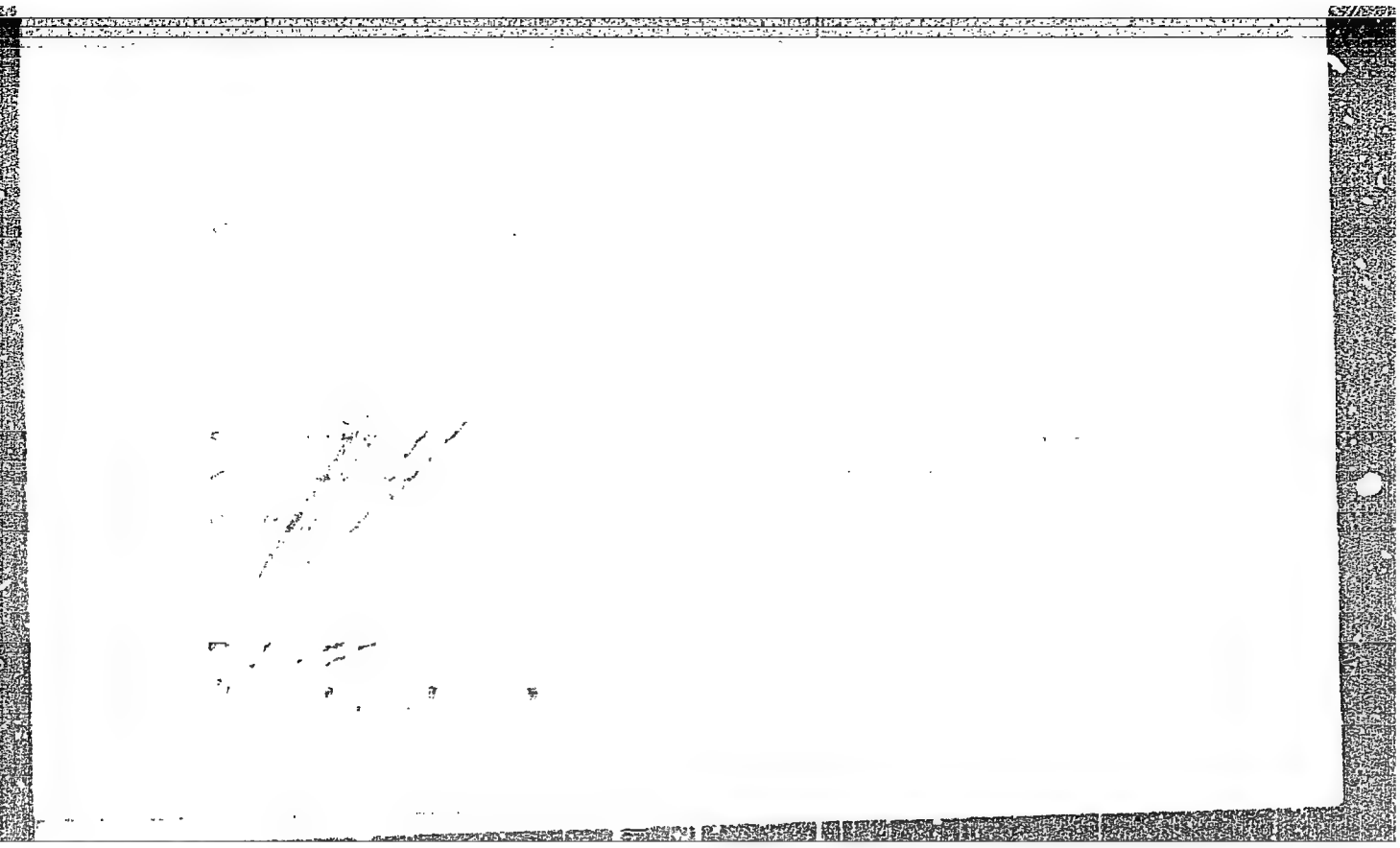
SOURCE: [illegible]

TOPIC TAGS: rare earth element, rare earth element oxide, electrical property, electrical resistivity, electrical conductivity loss tangent, dielectric constant, optical dielectric permittivity

ABSTRACT: [illegible] of rare-earth oxides

Card 1/1





L 44597-66 EWT(d)/EWT(m)/EWP(e)/EWP(w)/EWP(v)/EWP(k) IJP(c) WW/EM/WH

ACC NR: AR6010518 SOURCE CODE: UR/0196/65/000/010/B017/B018

AUTHOR: Volokobinskiy, Yu. M.

TITLE: Mechanical stresses leading to failure of ceramic insulation in a high-frequency electric field

SOURCE: Ref. zh. Elektrotekhnika i energetika, Abs. 10B68

REF SOURCE: Sb. Proboy dielektrikov i poluprovodnikov. M.-L., Energiya, 1964, 122-124

TOPIC TAGS: ceramic dielectric, mechanical stress, electric field, stress analysis, insulating material

ABSTRACT: With irregular heating of ceramic dielectrics in an electrical field, mechanical thermoelastic stresses appear, which may cause cracking of the ceramics. The intensity of the electric field E_p leading to cracking of a ceramic sphere because of the appearance of destructive thermoelastic stresses may be calculated from the formula:

$$E_p = \frac{5{,}2 \cdot 10^6}{R} \sqrt{\frac{K(1-\mu)\sigma_d}{\varepsilon \cdot \operatorname{tg}\delta \cdot f \alpha E_0}}, \text{ v/cm}$$

where R is the radius of the sphere, cm; μ is Poisson's ratio; α is the coefficient of linear expansion; K is the coefficient of thermal conductivity, watts/cm·degree; σ_d is the destructive

UDC: 621.315.612.001.1

Card 1/3

tensile stress in static bending, kg/cm^2; f is the frequency of the electrical field, cps; E_e is the modulus of elasticity, kg/cm^2; ε and tg δ are the values of specific inductive capacitance and the dielectric loss-angle tangent at the average temperature T_{av} at the moment of cracking, which may be determined in approximation from the formula:

$$T_{av} = T_{sur} + \frac{1}{2} \cdot \frac{1-\mu}{1+\mu} \cdot \frac{\sigma_p}{\alpha \cdot G} \quad \text{or} \quad T_{av} = T_{sur} + \frac{(1-\mu)\,\sigma_d}{\alpha E_e}$$

(T_{sur} is the surface temperature of the sphere being cooled, G is the shear modulus). An approximate estimate, based on information concerning the properties of the ceramic materials, shows that on a frequency of 20 Mc in the cracking of a sphere with a R = 1 cm, fabricated from German HF-steatite, E_d does not exceed 4 kv/cm. In the same conditions, E_d in a sphere fabricated from ceramics, containing 85% Al_2O_3, does not exceed 7 kv/cm. The destructive temperature difference ΔT (between the temperature of the center of the sphere and its surface temperature) in cracking is

$$\Delta T = \frac{5}{4} \cdot \frac{1-\mu}{1+\mu} \cdot \frac{\sigma_d}{\alpha \cdot G}.$$

Calculations show that in cracking of a sphere, a temperature difference that is 5/4 times greater is created in it than in the cracking of a rod, and 5/3 times greater than in the cracking of a plate. For example, a plate made of ceramics (containing 85% Al_2O_3) cracks when the temperature of the central layer is 135C above the temperature of the surface being cooled.

L 44597-66

ACC NR: AR6010518

A ceramic sphere made of the same material cracks when the temperature difference reaches 225C. [Translation of abstract] Bibliography of 4 titles. [Leningrad Electrical Engineering Institute im. V. I. Ul'yanov (Lenin) (Leningradskiy el-tekhnich. in-t)] A. Petrashko

SUB CODE: 11,20

Card 3/3

ACC NR: AP7003648 (N) SOURCE CODE: UR/0020/67/172/001/0083/0086

AUTHOR: Volokobinskiy, Yu. M.; Lototskiy, B. Yu.; Pasynkov, V. V.; Chirkin, L. K.

ORG: none

TITLE: Thermal processes in thin films

SOURCE: AN SSSR. Doklady, v. 172, no. 1, 1967, 83-86

TOPIC TAGS: semiconducting film, dielectric coating, volt ampere characteristic, thermal effect

ABSTRACT: The authors show that in thin semiconductor and dielectric films, local inhomogeneities of the thermal properties can play in important role and lead in a number of cases to S-shaped or N-shaped volt-ampere characteristics. The effect of thermal inertia of homogeneous semiconductor and dielectric films operated at alternating current on the volt-ampere characteristics is analyzed by expanding in Fourier series the heat flow and the temperature variation in both the film and substrate. The effect of substrate thickness is discussed. The results show that homogeneous films deposited on thick substrates have a larger thermal inertia and even at low frequencies the temperature of the film lags the changes in the heat release. It is shown that materials in which the conductivity decreases with temperature in a certain temperature interval cannot be analyzed by the same procedure as a uniform film. Some experimental results confirming the analysis are presented for Al_2O_3 films. This report was presented by Academician B. P. Konstantinov 10 March 1966. Orig. art. has:

Card 1/2

UDC: 539.216.22:537:539.216.22:536

ACC NR: AP7003648

2 figures and 16 formulas.

SUB CODE: 20/ SUBM DATE: 03Feb66/ OTH REF: 002

Card 2/2

L 1340-66 EED-2/EWT(d)/EWT(1)/EWT(m)/EWP(w) EM

ACCESSION NR: AP5021452 UR/0146/65/008/004/0133/0138
621.396.966

AUTHOR: Volokobinskiy, Yu. M. 44,55

TITLE: Thermoelastic stresses in ferrite components of instruments and radar units

SOURCE: IVUZ. Priborostroyeniye, v. 8, no. 4, 1965, 133-138

TOPIC TAGS: thermoelasticity, ferrite, elastic stress, electric field, magnetic field

ABSTRACT: Formulas are derived for calculating thermoelastic stresses which arise when ferrite components are heated in a high-frequency electromagnetic field, where the specific heat release Q is proportional to the volume of the component and independent of time. These formulas may be used for calculating thermoelastic stresses in ferrite spheres, rods and plates, as well as for estimating stresses in components with more complex shapes. As an example of application of the formulas, the tensile thermoelastic stresses on the surface of a ferrite ring are approximated. It is found that considerable thermoelastic stresses arise even in weak magnetic fields. In strong magnetic and electric fields the stresses which arise may cause

Card 1/2

L 1340-66

ACCESSION NR: AP5021452

3

cracking of ferrite components. Orig. art. has: 3 figures, 14 formulas.

ASSOCIATION: Leningradskiy elektrotekhnicheskiy institut im. V. I. Ul'yanova (Lenina) (Leningrad Electrical Engineering Institute)

SUBMITTED: 16Dec64 ENCL: 00 SUB CODE: EC, SS

NO REF SOV: 007 OTHER: 000

Card 2/2

BOGORODITSKIY, N.P.; PASYNKOV, V.V.; RIFAT RIZK BASILI; VOLOKOBINSKIY, Yu.M.

Electric properties of oxides of rare-earth elements. Dokl. AN SSSR 160 no.3:578-581 Ja '65.

(MIRA 18:3)

1. Leningradskiy elektrotekhnicheskiy institut im. V.I. Ul'yanova-Lenina. Submitted August 7, 1964.

AUTHORS: Bogoroditskiy, N. P., Volokobinskiy, Yu. M., Fridberg, I. D. SOV/20-120-3-13/67

TITLE: The Electric Properties of a Dielectric With a Variable Number of Relaxers (Elektricheskiye svoystva dielektrika s peremennym chislom relaksatorov)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol. 120, Nr 3, pp. 487-490 (USSR)

ABSTRACT: The various conditions of the dependence of the amount of relaxation polarization on the time necessary for it to commence are discussed first. If the field in the dielectric changes sinusoidally with the circuit frequency as time progresses, the dielectricity constant ε may for a given frequency be less than that which the dielectric would have in a constant field. An expression is given for the frequency at which the dependence of $tg\delta$ upon ω has a maximum. The relaxation time τ is assumed exponentially to depend on the temperature. The voluminous experimental material available shows that the temperature maximum of $tg\delta$, which is predicted by the theory, can in some cases not be determined experimentally. The discrepancy between theory and experiment mentioned in this paper is due to the simplifying assumption that the number of relaxers is independent of temperature. However, experimental data favor an increased number of

Card 1/3

relaxers in the case of a temperature increase. According to Skanavi (Ref 1) the ions are in a "consolidated" state at low temperature, from which state they can be liberated when the dielectric is heated. The authors here investigate the case in which the number of relaxers increases with rising temperature. First, it is assumed that the dependence of relaxation polarization P on the temperature T in a constant field is determined by the formula $P = P_0 e^{-U/kT}$. Here U denotes the relaxation energy of the relaxer and P_0 - a constant. The aforementioned assumption is replaced by the more complete assumption $\kappa = \kappa_0 e^{-U/kT}$, where κ_0 denotes a constant. If the number of relaxers increases with rising temperature, the temperature maximum of $tg\delta$ is found to occur at a higher temperature than if the number of relaxers is constant. In some cases the reduction of the number of relaxers with increased temperature may have the follwoing consequences: a) Increase of the dielectric constant in the case of rising temperature. b) Lacking maximum of $tg\delta$ during the course taken by the temperature $tg\delta$. c)Increase of the maximum of $tg\delta$ during

the course taken by the temperature of tgδ in the case of an increase of frequency. There are 5 references, 5 of which are Soviet.

ASSOCIATION: Leningradskiy elektrotekhnicheskiy institut im.V.I.Ul'yanova (Lenina)(Leningrad Institute of Electrical Engineering imeni V.I.Ul'yanov (Lenin))

PRESENTED: February 20, 1958, by A.F.Ioffe, Member, Academy of Sciences, USSR

SUBMITTED: February 18, 1958

1. Dielectrics--Electrical properties 2. Dielectrics--Temperature factors 3. Dielectrics--Polarization 4. Mathematics--Applications

S/020/62/144/006/013/015
B108/B102

AUTHOR: Volokobinskiy, Yu. M.

TITLE: Mechanism of rupture of brittle dielectrics at high and superhigh frequencies

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 144, no. 6, 1962, 1285-1288

TEXT: The failure of massive ceramic bodies, free from flaws, at high and superhigh frequencies is due to release of heat in the solid phase and consequent thermal stress. The destructive temperature gradient is calculated for a large plane-parallel plate: $\Delta T_d = \chi\sigma_d(1 - \mu)/\alpha E$, where $\chi = (T_m - T_o)_d/(T_n - T_o)_d$. ($\sigma_d$ - static bending disruptive stress, μ - Poisson's ratio, α - linear expansion coefficient, E - Young's modulus, T_m - temperature in the middle plane of the plate, T_n - temperature in the plane in which the mechanical stress is zero, T_o - surface temperature). The temperature distribution of the plate in an hf electrical field has an almost parabolic cross section. There are

Card 1/2

S/020/62/144/006/013/015
B108/B102

Mechanism of rupture of brittle...

3 figures.

ASSOCIATION: Leningradskiy elektrotekhnicheskiy institut im. V. I. Ul'yanova (Lenina) (Leningrad Electrotechnical Institute imeni V. I. Ul'yanov (Lenin))

PRESENTED: January 18, 1962, by B. P. Konstantinov, Academician

SUBMITTED: January 15, 1962

Card 2/2

BOGORODITSKIY, N.P.; VOLOKOBINSKIY, Yu.M.

Theory of the thermal breakdown of dipole dielectrics. Dokl. AN SSSR 144 no.4:766-769 Je '62. (MIRA 15:5)

1. Leningradskiy elektrotekhnicheskiy institut im. V.I. Ul'yanova-Lenina. Predstavleno akademikom B.P.Konstantinovym.
(Dielectrics)

15.2600

S/146/62/005/006/005/006
D201/D308

AUTHORS: Volokobinskiy, Yu.M. and Medvedev, K.Ye.

TITLE: Thermal elastic stresses in radio-components for instrumentation

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Priborostroyeniye, v. 5, no. 6, 1962, 101-109

TEXT: The authors give the theory of thermal stresses occurring in radio-components under the effect of high-frequency fields, and in particular that of stresses in the insulators, plates and shafts made of brittle ceramic materials. The electric field strength resulting in the destruction of a cylindrically shaped component is

$$E_p = 3.8 \cdot 10^6 \sqrt{\frac{1}{R^2 - 3r_o^2 + \frac{4r_o^4}{R^2 - r_o^2} \ln \frac{R}{r_o}} \cdot \frac{K}{\varepsilon \operatorname{tg}\delta f} \cdot \frac{(1-\mu)\sigma p}{\alpha E_y}} \quad \text{v. cm}^{-1} \quad (45)$$

Card 1/2

Thermal elastic stresses ...

Cylindrical insulators, subject to compression split axially and those subject to extension split perpendicularly to their axis. There are 3 figures.

ASSOCIATIONS: Leningradskiy elektrotekhnicheskiy institut im. V.I. Ul'yanova (Lenina) (Leningrad Electrotechnical Institute im. V.I. Ul'yanov (Lenin)); Leningradskiy institut tochnoy mekhaniki i optiki (Leningrad Institute of Precision Mechanics and Optics)

JA

SUBMITTED: May 5, 1962

Card 2/2

S/146/61/004/003/013/013
D217/D301

AUTHOR: Volokotinskiy, Yu.M.

TITLE: The third conference of the higher educational establishments on modern dielectrics and semiconductor engineering

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Priborostroyeniye, v. 4, no. 3, 1961, 141-144

TEXT: The third conference of the Vuzy (Higher Educational Establishments) on Modern Dielectrics and Semiconductor Engineering held at the Leningrad Elektrotekhnicheskiy (Electrical Engineering) Institut imeni V.I. Ul'yanov was in session during June 1960. 178 papers were presented at meetings of the following ten sections: 1) Dielectric Physics; 2) Non-organic Dielectrics; 3) Organic Dielectrics, 4) Irradiation of Dielectrics and Semiconductors; 5) Seignettoelectric Materials and Ferrites; 6) Crystals and Crystallization; 7) Semiconductor Physics; 8) Semiconductor diodes and

Card 1/7

S/146/6 /0 ... 13
D217/D502

The third conference of the ...

transistors; 9) Photoelements and luminophores; ... resistors and thermoelectric instruments. Professo ... kiy, outlined the present status of information on ... semiconductors, and stated the aim of the conferen... the physical and technical problems arising in co... use of dielectrics and semiconductors, and to decid... tions of future research in order to produce new, ... pensive materials and instruments." Academician A.I. ... paper on cybernetics and reliability considered the ... of electronic machines in economics, medicine, biology ..., linguistics, and meteorology, and stressed the impor... machines for the collecting, classifying and storing ... In his opinion, cybernetics will play a prominent p... trial automation. The use of semiconductors in elect... opens new paths for further developing the science of ... Professor D.N. Nasledov during a plenary session, presented a detailed account of investigations on the properties of new semiconductor materials and devices, and considered the possib...ties of

Card 2/7

S/146/61/004/003/013/013
D217/D301

The third conference of the ...

future developments in solid physics. The meetings of section 1) covered the work carried out on solid dielectrics, including the apparatus used. Section 2) dealt with reports on the properties of ceramics, glasses and mica in a wide range of temperatures, design of insulators, especially of the high-frequency type, oxidation of foils for electrolytic capacitors and the nature of conducting films on aluminum. Section 3) heard reports on transformer oils and impregnants. During the meetings of Section 4) B.M. Bul, Corresponding Member AS USSR, and F.I. Kolomiytsev, Professor at Dnepropetrovsk University told of changes in the properties of insulation due to long term γ-irradiation. Section 5) heard a report on investigations on strontium-bismuth-titanates conducted in the temperature range of 4.2 - 500°K at the laboratory of Professor G. I. Skanavi. A.L. Khodyakov, Docent, and T.N. Lezgintseva at Rostov-on-Don University reported on the effect of iron dioxide impurities on the dielectric properties of solid solutions of barium titanates and barium stannates. Engineer, F.P. Kramerov, described the "Thermoelectrograph" an instrument for rapidly determining the

Card 3/7

The third conference of the ...

variations in the dielectric permittivity of seignettoelectrics with temperature. Section 6) heard reports on the properties of crystals, crystallization phenomena, lattice energy of compounds, contact melting, etc. Section 7) dealt with reports on the electric and electromagnetic properties of a number of semiconductors and dielectrics, surface phenomena in semiconductors and applying semiconductors in electrical engineering. The theoretical work submitted included papers on lattice oscillations and the energy spectrum of holes in valence crystals. A paper on semiconductor junctions of the type AIIIBV by Professor D.N. Nasledov was presented at a plenary session. At the Professor's laboratory great importance is being attached to investigations on indium antimonide and arsenides of gallium and indium used in studying the structure of energy levels and dispersion mechanisms of charge carriers. Important information on the latter is also obtained by studying the Nernst-Ettinghausen effect. It has been shown that the process occurring in the transition regions in gallium arsenide are more complex than those suggested by Shockley. Practical devices pro du-

The third conference of the ...

ced by the laboratory include a diode operating at 300°C and a sensing element of indium arsenide for measuring currents up to 50 kA. T.S. Zhuravleva, senior lecturer at the Novocherkasskiy potekhnicheskiy institut (Novocherkassk Polytechnic Institute) stated that the new sensing element has been successfully applied to quality control of industrial permanent magnets. Section 9) heard reports on the physical processes occurring in the transition regions of silicon, germanium, silicon carbide, gallium arsenide and also on the phenomena in selenium and copper oxide rectifiers. Other papers dealt with practical applications of diodes and transistors during the meetings of Section 9). B.P. Kozyrev, Professor at the Leningrad Electrotechnical Institute im. V.I. Ul'yanov, told of a new type of a low temperature photoelement made of thallium iodide and thallium bromide; G.A. Savel'yev, Assistant at the Leningrad Electrotechnical Institute im. V.I. Ul'yanov told of a flat non-evacuated luminescent screen; Engineer V.I. Turkulets considered photodiodes and phototransistors based on silicon and germanium; and M.S. Kosman, Professor at the Leningrad pedagocheskiy

Card 5/7

S/146/61/004/003/013/013
D217/D301

The third conference of the ...

institute im. A.I. Gertsena (Leningrad Pedagogic Institute im. A.I. Gertsen) and V.A. Izvozchikov, Aspirant, told of the effect of aging on photoelectric painting. Section 10) dealt with the production and application of non-linear semiconductor resistors, thermocouples, thermobatteries and thermogenerators of increased power. Most papers on these subjects were submitted by the staff members of the Nauchno-issledovatel'skiy institut gorodskoy i sel'skoy svyazi (Scientific Research Institute of Urban and Rural Communication). The conference passed the following resolutions: 1) To itensify the work on dielectrics and semiconductors, in particular on heat-resistant insulation, non-organic polymers, organic semiconductors, high electric strength materials, reliability of semiconductor devices with increased stability within a wider range of temperature, introduction of new experimental methods and production of new materials; special attention should be given to the theoretical aspects involved. 2) To ensure the present practice of regular meetings by convening the fourth conference in 1962. 3) To recommend to the MVSSO USSR the organizing of specialized external

Card 6/7

The third conference of the ...

and evening courses on dielectrics and semiconductors. 4) To issue conference papers in a single volume and in the publications of the MVSSO USSR. 5) To approach again the MVSSO USSR with respect to the resolutions of past conferences regarding the industrial application of accomplished research work on semiconductors and insulation (e.g. the measuring equipment designed by the Leningrad politekhnicheskiy institut im. M.I. Kalinina (Leningrad Polytechnical Institute im. M.I. Kalinin)). 6) To appeal to the MVSSO USSR for text books and educational aids for all departments specializing in dielectrics and semiconductors, and insulation and cables engineering to be supplied by the end of 1965; also to re-edit the existing literature on the above subjects. 7) To appeal to the Academy of Sciences USSR for more attention to the subject of solid physics and, in particular, for improved support for work being done in the Laboratory of G.I. Skanavi at the Fizicheskiy institut akademii nauk USSR im. A.A. Lebedeva (Physics Institute of the Academy of Sciences USSR im. A.A. Lebedev)

Card 7/7

VOLOKOBINSKIY, Yu. M.

USSR/Electricity - Dielectrics, G-2

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 35001

Author: Volokobinskiy, Yu. M.

Institution: None

Title: Effect of Air Inclusions on Electric Strength and on Losses of Insulating Materials

Original Periodical: Zh. tekhn. fiziki, 1956, 26, No 3, 568-575

Abstract: Examination of the processes related to the occurrence of discharges in ellipsoidal air inclusions of porous dielectrics, located in an alternating electric field.

Card 1/1

PA - 3019

AUTHOR: VOLOKOBINSKIY, Yu.M.

TITLE: The Influence Exercised by an Electric Field on the Properties of Thin Dielectric and Semiconductive Layers. (Vliyaniye elektricheskogo polya na svoystva tonkikh dielektricheskikh i poluprovodnikovykh sloyev, Russian).

PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol 113, Nr 5, pp 1023 - 1024 (U.S.S.R.)

Received: 6 / 1957 Reviewed: 7 / 1957

ABSTRACT: The connection between the electric conductivity of a thin lay and its electric resistivity is as yet not fully explained. Th the authors investigate the electric conductivity and the elec resistivity of the thin layer of some oxides, sulphides, and o compounds. Most metals are coated with oxide layers either ele lytically or by heating. Only in the case of metals with well- conducting oxides and badly conducting sulphides were the sulp layers investigated. The experimental order is described in s

On the occasion of the layers of MgO, Al_2O_3, ZnO, CdS, NiO, T Nb_2O_5, which had a thickness of from 30 to 1000 Å, the transm of metallic ions from the base to the Cu_2S with hole conducti observed. In some cases the presence of transmitted ions in is observed e.g. if aluminum is used. The ion flow is produc heating of the layer by the current passing through them. I

Card 1/2

The Influence Exercised by an Electric Field on the Properties of Thin Dielectric and Semiconductive Layers. PA - 3019

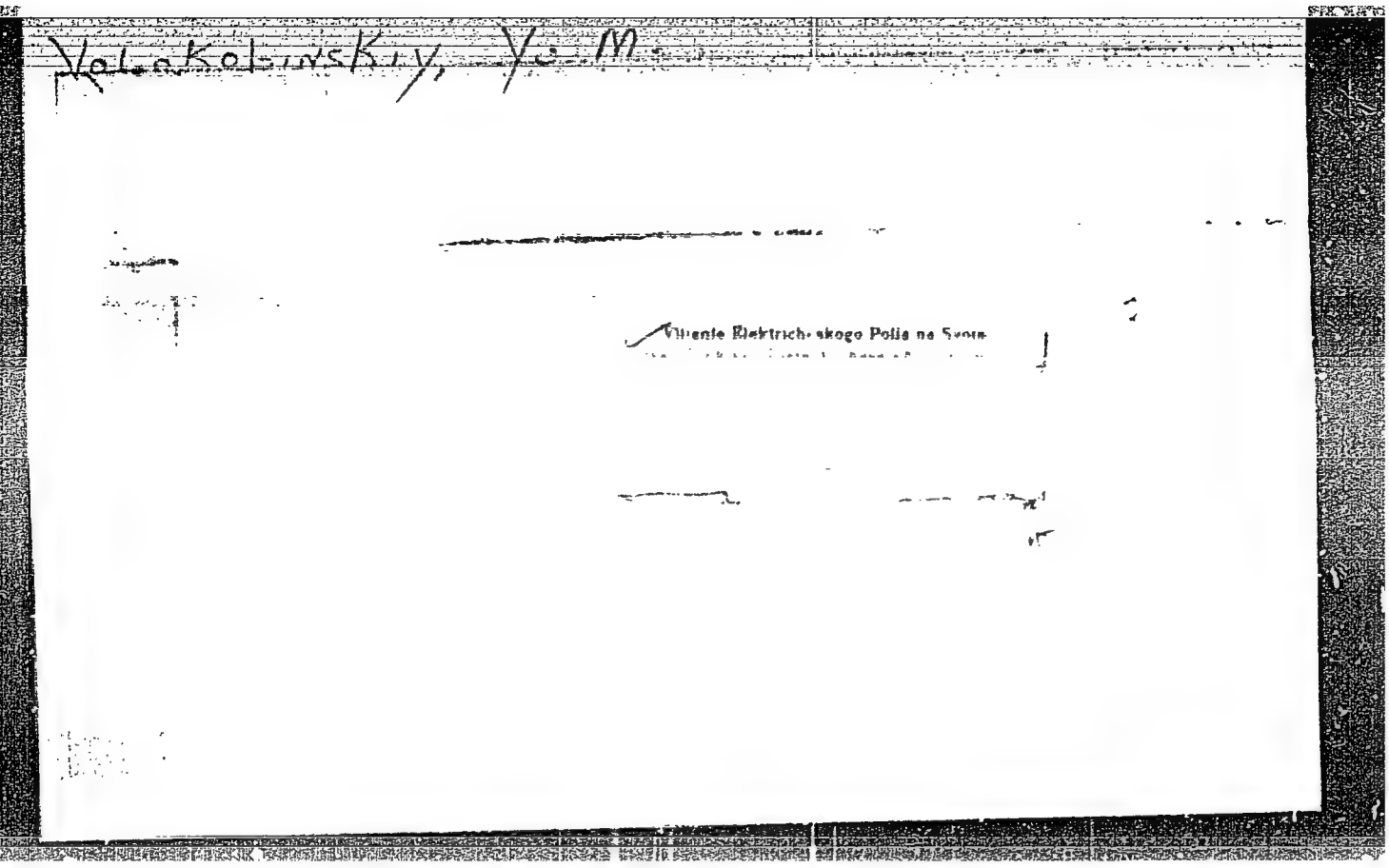
of the Nb_2O_5 layer transmission of ions is sometimes hardly noticeable; the corresponding volt-ampere characteristic is discussed on the basis of an illustration. The device is shortly discussed in the case of which higher voltages can be used for measuring without causing breakdown. The investigation of other coatings, as e.g. an oxide layer on tantalium, shows a flat dependence of amperage upon voltage. In the case of some systems, e.g. a layer of aluminum oxide, the dependence of amperage on voltage flattens with increasing temperature. In some cases amperage increases sharply, and sometimes even abruptly if certain voltages are applied to the layer, without any breakdown being caused. There follows an explanation of experiments carried out. (With 2 illustrations)

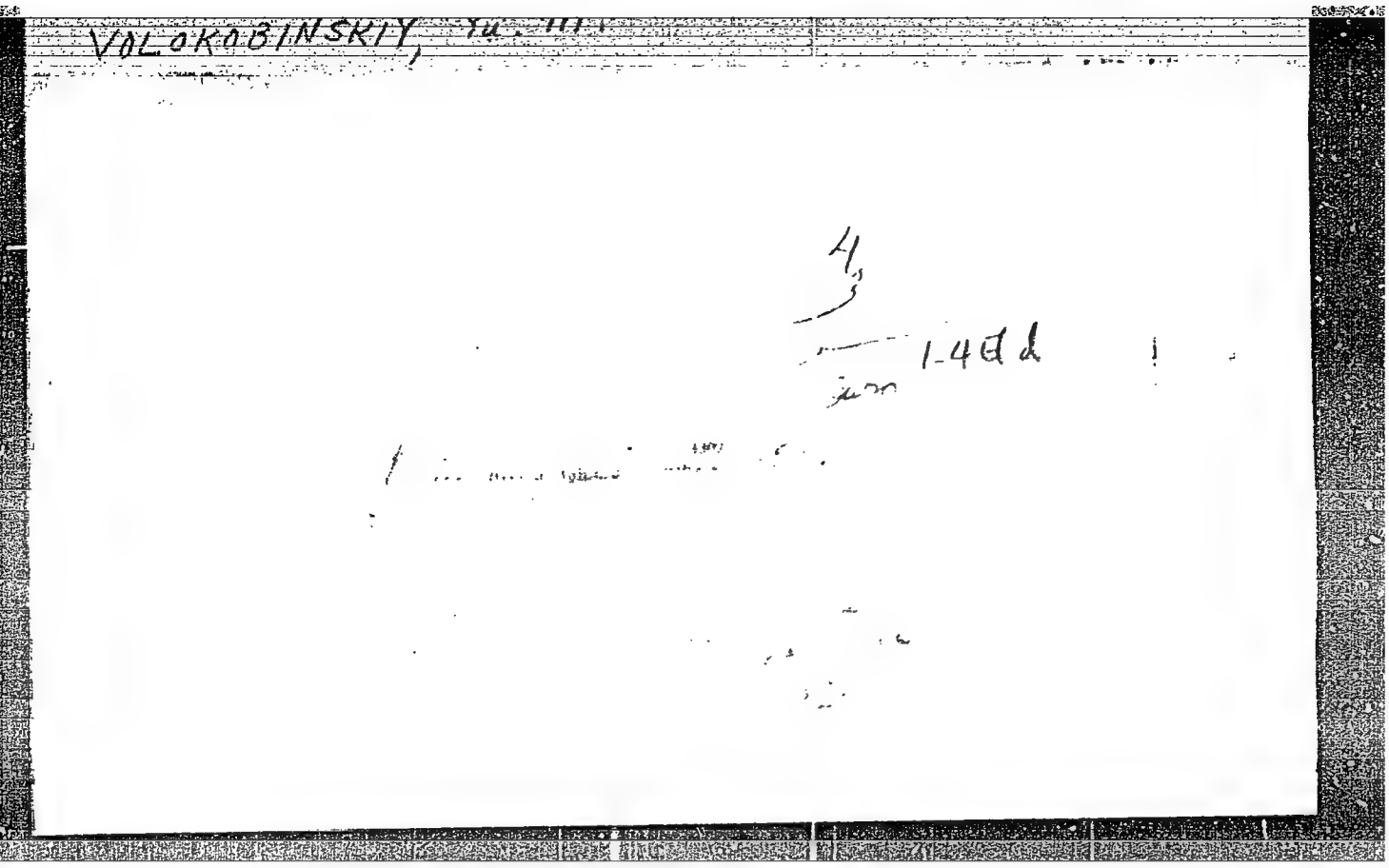
OCIATION: Not given
TED BY: A.F.IOFFE, Member of the Academy
TED: 1.11.1956
LE: Library of Congress

VOLOKOBINSKIY, Yu.M., kand.tekhn.nauk

Reviewing the chapter "Molecular mechanism of high-frequency heating of dielectrics" of A.V. Lykov's book "Heat and mass exchange in drying processes." Izv.vys.ucheb.zav.; radiotekh. no.5:616-617 S-O '58. (MIRA 12:1)

(Induction heating) (Dielectrics)





AUTHOR: VOLOKOBINISKIY, Yu.M. 20-6-14/59

TITLE: The Tunneling Effect in the Sulphide Rectifiers. (Tunnel'nyy effekt v sulfidnykh vypryamitelyakh. Russian).

PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol 113, Nr 6, pp 1239 - 1242 (U.S.S.R.)

ABSTRACT: First of all, the paper under review lists the statement and the conclusions of the theory of the tunneling effect which can be verified by experiments. Let the applied voltage be lower than the height of the potential barrier, otherwise the conclusions from the theory lose their validity. The phenomena which are subsequently described in the paper under review take place at the contact of an aluminum (or magnesium) plate with a tablet (thickness 3 to 4 mm, surface 0.5 cm^2) of monovalent copper sulphide. The properties of the copper sulphide are enumerated. At the formation of the rectifier the tablet is 'welded together' with the aluminum plate, with the aluminum falling into the sulphide layer near to the electrode. In this context, the resistance of the sulphide must increase and the concentration of the carrying agents decrease. The processes taking place in the sulphide element depend on the voltage applied to it. Then the paper under review compares the experimental data with the statements of the theory: (1) First of all, the dynamic Volt-Ampère characteristic of the rectifier with an aluminum electrode (for

Card 1/3

The Tunneling Effect in the Sulphide Rectifiers.

20-6-14/59

ASSOCIATION: Not given.
PRESENTED BY: IOFFE, A.F., Member of the Academy, on 19 December 1956
SUBMITTED: 1 November 1956
AVAILABLE: Library of Congress

Card 3/3

VOLOKOBINSKIY, Yu.M.

Tunnel effect in sulfide rectifiers. Dokl. AN SSSR 113 no.6:1239-1242 Ap '57. (MLRA 10:6)

1. Predstavleno akademikom A.F. Ioffe.
(Electric current rectifiers) (Semiconductors)

VOLOKOBISKII, Iu. M.

USSR/Physics

Card : 1/1 Pub. 22 - 15/48

Authors : Volokobiskiy, Yu. M.

Title : About electric momenta of gases and liquids having polar molecules.

Periodical : Dok. AN SSSR 97/5, 813 - 816, August 11, 1954

Abstract : Study of electric momenta of gases and liquids is described. Kirkwood's theory of polarization of dipole liquids is criticized and a correction for the quadratic momentum μ_x^2 of a molecule is given. Four references (1935-1946).

Institution : ...

Presented by : Academician A. F. Ioffe, April 8, 1954

VOLOKOBINSKIY, Yu. M.

USSR/Physics - Dielectric rupture FD-2405

Card 1/1 Pub. 153 - 9/21

Author : Volokobinskiy, Yu. M.

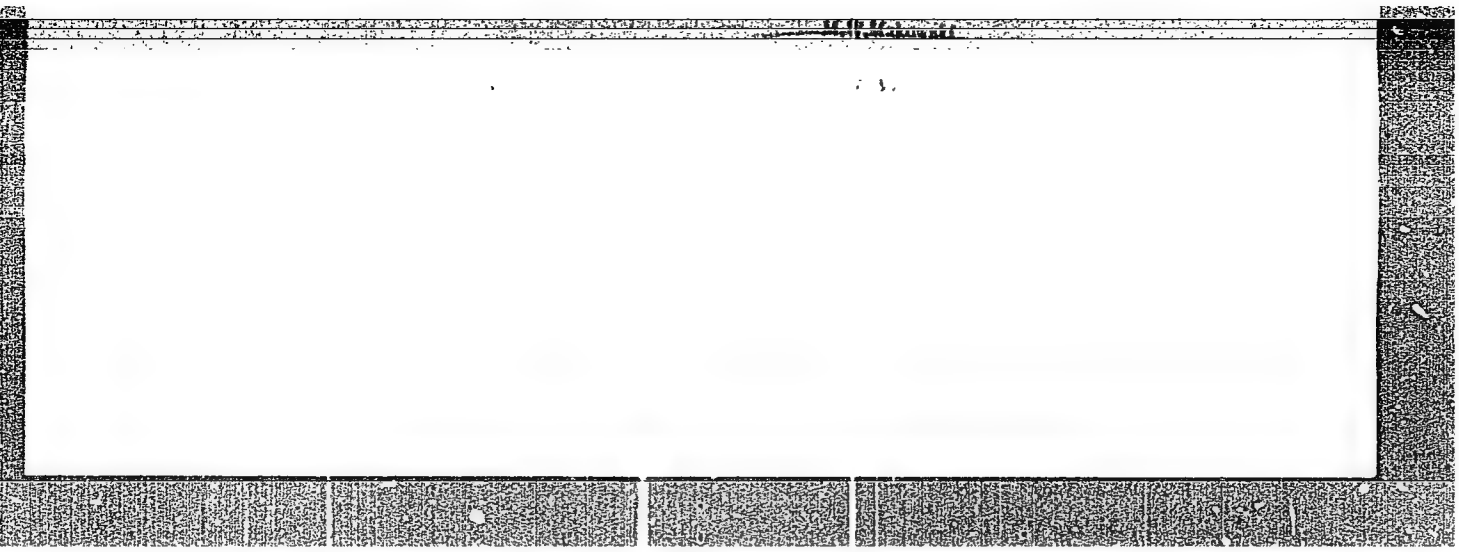
Title : Certain problems in the theory of the rupture of inhomogeneous dielectrics

Periodical : Zhur. tekh. fiz. 25, 74-80, Jan 1955

Abstract : The author discusses the phenomena occurring in air occlusions of an electric insulator. He shows that in strong fields the energy dispersed in individual occlusion per unit time increases linearly with increase of field. He finds the energy released during discharge, and derives an expression for the time of relaxation of dispersal of the charges collected on the surfaces of the occlusions. He gives a formula for computing the distortion and amplification of the field by the conducting occlusion, from which it is evident that the amplification of the field does not depend upon the dielectric permeability of the material. Eight references: e.g. V. T. Renne, Trudy Nauchno-issled. instituta, No 2, 40, 1948; G. A. Grinberg, Izbrannyye voprosy matematicheskoy teorii elektricheskikh i magnitnykh yavleniy [Selected problems in the mathematical theory of electrical and magnetic phenomena], 1948.

Institution: --

Submitted : June 23, 1954



APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001860710011-6"

VOLOKOBINSKIY, Yu.M.; MEDVEDEV, K.Ye.

Thermoelastic stresses in radio parts used in the manufacture of instruments. Izv.vys.ucheb.zav.; prib. 5 no.6:101-109 '62.
(MIRA 15:12)

1. Leningradskiy elektrotekhnicheskiy institut imeni Ul'yanova (Lenina) i Leningradskiy institut tochnoy mekhaniki i optiki.
(Thermal stresses) (Instrument manufacture)

BOGORODITSKIY, I.P.; VOLOKOBINSKIY, Yu.M.; MEDVEDEV, K.Ye.

Destructive voltage of ceramic partition insulators at high and ultra-high frequencies. Izv. vys. ucheb. zav.; radiotekh. 6 no.1:45-51 Ja-F '63.

1. Rekomendovana kafedroy poluprovodnikov i dielektrikov Leningradskogo elektrotekhnicheskogo instituta imeni V.I.Ul'yanova (Lenina).
(Electric insulators and insulation)

VOLCKOVENKO, A. I.

35559. Nekotoryye Sravneniya Mezhdu Normal'Noy I Trakhomatoznoy Kon'yunktivoy (V Svyazi S Voprosom O Grantisakh Fiziologicheskikh I patologicheskikh Reaktsiy Yeye Na Razdrazheniya). Sbornik K Pyatidesyatiletiyu Nauch., Ped., Vracheb. I Obshchestv. Deyatel'nostiK. Kh. Orlova. Gor'kiy, 1949, c. 50-59.

Letopis' Zhurnal'nykh Statey, Vol. 48, Moskva, 1949

VOLOKONENKO, A. I.

35560. O Gistologicheskom Stroyenii Granulyatsionnoy Tkani Kon'yunktivy Cheloveka. Sbo nik K Pyatidesyatiletiyu Nauch., Ped., Vracheb. I Obshchestv. Deyatel'nosti K. Kh. Orlova. Gor'kiy, 1949, c. 163-70.

Letopis' Zhurnal'nykh Statey, Vol. 48, Moskva, 1949

VOLOKONENKO, A.I., professor

Effect of sleep therapy on intraocular pressure. Vest. oft. 33 no.5:3-7 S-O '54. (MLRA 7:10)

1. Direktor glaznoy kliniki Chkalovskogo meditsinskogo instituta.
(GLUCOMA, therapy, sleep ther.) (SLEEP, therapeutic use, glaucoma)

VOLOKONENKO, A.I., professor.

"Review of Soviet medical abstracts." Eye diseases, no.8,1954.
Reviewed by A.I.Volokonenko. Vest.oft.34 no.4:41 Jl-Ag '55.
(MLRA 8:10)
(EYE--DISEASES, AND DEFECTS)

VOLOKONENKO A.

EXCERPTA MEDICA Sec.12 Vol.11/4 Ophthalmology Apr57

663. VOLOKONENKO A.I. *The classification of keratitis according to the pathogenetic principle (Russian text) VESTN. OFTAL. 1956, 6 (3-11)

The author states that the present numerous classifications of keratitis are based on incorrect grounds. He expresses his opinion that the only sound classification of keratitis should be on the basis of the pathologic changes in the cornea, combined with the aetiologic factors whenever possible. On the basis of many years of study of inflammations of the cornea, the author suggests these 2 groups: (1) exogenous and (2) endogenous keratitis. In the exogenous keratitis there are 2 subgroups: Traumatic and infectious keratitis. The cause of traumatic keratitis can be mechanical, chemical and physical trauma (light, heat and radioactive irradiation). The infectious keratitis can be again subdivided into: pneumococcic, staphylococcic, trachomatous pannus and others. In the group of endogenous keratitis belong: haematogenous (lues, tuberculosis), allergic, avitaminotic, uveal and chiefly neurogenic keratitis. This classification is an attempt to give more rational principles for the basis of the classification of keratitis. It needs further perfections. Some case histories illustrate the author's point. His conclusions are as follows: (1) In the classification, different forms of keratitis are combined according to pathogenetic signs. (2) The role of external and internal influence, also the role of the protective neuro-reflectory mechanism is stressed. (3) The decyphering of the pathogenetic mechanism helps in some way the therapeutic measures, particularly in those cases in which the aetiological factor is not known. The pathogenetic basis of each case stimulates the ophthalmologist in studying and finding the deeper connection between the corneal process and the general condition of the body.

Sitchevska - New York, N.Y.

VOLOKOMENKO, A.I., professor

Review of the magazine "Vestnik oftalmologii" in 1955. Vest.oft. 70 no.2:62-64 Mr-Ap '57. (MIRA 10:6)
(OPHTHALMOLOGY--PERIODICALS)

VOLOKONENKO, A.I., prof.

Critical review of "Oftalmologicheskii zhurnal" for 1960. Oft. zhur. 16 no.8:503-505 '61. (MIRA 15:4)
(OPHTHALMOLOGY—PERIODICALS)

VOLOKONENKO, A.I.

ARKHANGEL'SKIY, V.N., prof. (Moskva); VOLOKONENKO, A.I., prof. (Orenburg)

Forty years of Soviet ophthalmology. Vest.AMN SSSR 12 no.6:39-47 '57. (MIRA 11:2)

1. Chlen-korrespondent AMN SSSR (for Arkhangel'skiy)
(OPTHALMOLOGY
in Russia)

VOLOKONSKAYA, V.F., kand.med.nauk

Quantitative determination of survival of Shigella dysenteriae in bread. Gig. i san. 26 no.6:99-101 Je '61. (MIRA 15:5)

1. Iz kafedry epidemiologii Kiyevskogo instituta usovershenstvovaniya vrachey.
(BREAD--MICROBIOLOGY) (SHIGELLA DYSENTERIAE)

VOLOKONSKAYA, V.F.

"Rabies; etiology, pathogenesis and prevention," edited by P.N. Kosiakov, R.M.Shen, L.P.Gorshunova. Reviewed by V.F.Volokonskaia. Zhur.mikrobiol.epid.i immun. 31 no.9:144-146 S '60. (MIRA 13:11)

(RABIES) (KOSIAKOV, P.N.) (SHEN, R.M.) (GORSHUNOVA, L.P.)

FEDOROVA, Zoya Mikhaylovna. Prinimali uchastiye: PANASYANTS, A.G., inzh.; GRETSOV, V.L., kand.tekhn.nauk; VOLOKONSKIY, V.F., kand.tekhn.nauk; VETROV, A.P., inzh.; BARUZDIN, M.A., otv.red.; SHOROKHOVA, A.V., red.izd-va; PROZOROVSKAYA, V.B., tekh.red.; BOLDYREVA,Z.A., tekhn. red.

[Collected examples and problems on mine hoisting equipment] Sbornik primerov i zadach po rudnichnym pod"emnym ustanovkam. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po gornomu delu, 1961. 352 p. (MIRA 14:12)

(Mine hoisting)

VOLOKONSKIY, V.F., inzh.

A defect in the pneumatic brakes for mine hoisting machinery. Ugol' Ukr. 4 no.12:18-19 D '60. (MIRA 13:12)

1. Khar'kovskiy gornyy institut.
(Mine hoisting) (Air brakes)

VOLOKONSKIY, V.F.

Theoretical grounds for the calculation of a breaking system with pneumatic drive. Sbor.nauch.trud. KHGI 5:379-398 '58. (MIRA 14:4)

(Air brakes)

VOLOKONSKIY, V.F., inzh.

Theory of the pneumatic, spring-loaded operation of brakes in mine hoisting machines. Izv.vys.ucheb.zav.; gor.zhur. no.2:146-150 '60. (MIRA 14:5)

1. Khar'kovskiy gornyy institut.
(Mine hoisting) (Brakes)

VOLOKONSKIY, V.F., kand.tekhn.nauk

Designing the brake hydraulic drives for mining machinery as servomechanisms. Ugol' Ukr. 6 no.6:21-22 Je '62. (MIRA 15:7)

1. Khar'kovskiy gornyy institut.
(Coal mining machinery—Hydraulic drive)

VOLOKONSKIY, V.F., kand.tekhn.nauk; IVANOV, A.A., doktor tekhn.nauk

Concerning A.E.Trop's article "Automatization of hoisting machines with asynchronous drive. Gor. zhur. no.7:54-57 Jl '61. (MIRA 15:2)

1. Khar'kovskiy gornyy institut (for Volokonskiy). 2. Dnepropetrovskiy gornyy institut (for Ivanov).
(Mine hoisting)
(Automatic control)
(Trop, A. E.)

VOLOKONSKIY, V.F., knad.tekhn.nauk; GRETSOV, V.L., kand.tekhn.nauk

Operation of safety brakes on mine hoists. Gor. zhur. no.3:57-58 Mr '62. (MIRA 15:7)

1. Khar'kovskiy gornyy institut.
(Mine hoisting—Brakes)

GLUSHKO, M.F., kand.tekhn.nauk; POCHTOVENKO, Yu.Ye., inzh.; VOLOKONSKIY, V.F., inzh.

Strain on ropes of irregular strands during winding on a pulley. Izv.vys.ucheb.zav.; gor.zhur. no.2:151-157 '60. (MIRA 14:5)

1. Khar'kovskiy gornyy institut.
(Pulleys) (Ropes)

VOLOKONSKIY, V. F. Cand Tech Sci -- (diss) "Theoretical premises for the calculation of the combined pneumatic braking gear of mine elevators (Work stoppage)." Khar'kov, 1959. 13 pp (Min of Higher and Secondary Specialized Education UkSSR. Khar'kov Mining Inst), 150 copies (KL 47-59, 114)

GLUSHKO, M. F., kand. tekhn. nauk; VOLOKONSKIY, V. F., kand. tekhn. nauk

Design of nontwisting cables. Izv. vys. ucheb. zav.; gor. zhur. 5 no.8:161-168 '62. (MIRA 15:10)

1. Khar'kovskiy gornyy institut. Rekomendovana kafedroy gornoy mekhaniki.

(Wire rope)

YEMANUILOV, Vladimir Ivanovich, komsomolets, VOLOKOV, Aleksandr Vasil'yevich, komsomolets; ZAGORSKIY, G., red.; PAVLOVA, S., tekhn. red.

[Corn, the king of crops] Kukuruza - bogatyrskaia kul'tura. Moskva, Mosk. rabochii, 1961. 17 p. (MIRA 14:7)

1. Traktoristy sovkhoza "Pobeda" Zagorskogo rayona (for Yemanuilov, Volokov)

(Corn (Maize))

KHOL'NOVA, V.I.; KOVRIZHNYKH, V.G.; YELAGINA, Z.A.; Prinimali uchastiye: VINOKUROV, N.D.; ANDRIANOV, F.F.; ZAL'TSMAN, I.Ya.; VOLKOV, Ye.S.; VASILEVSKAYA, M.A.; KOMAROVA, N.K.

Investigating large-size forgings made of the B93 alloy. Alium. splavy no.3:136-144 '64. (MIRA 17:6)

VOLOKOVYKH, N. M.

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Batulin, S. G.; Golovin, YE. A.; Zelenova, O. I.; Kashirtseva, M. F.; Komarova, G. V.; Kondrat'yeva, I. A.; Lisitsin, A. K.; Perel'man, A. I.; Sindeyeva, V. D.; Chernikov, A. A.; Shmariovich, YE. M.

Exogenous epigenetic deposits of uranium; formation conditions (Ekzogennyye epigeneticheskiye mestorozhdeniya urana; usloviya obrazovaniya). Moscow, Atomizdat, 1965. 321 p. illus., biblio. Errata slip inserted. 1100 copies printed.

TOPIC TAGS: deposit formation, epigenetic theory, exodiagenetic deposit, surface uranium accumulation, uranium bituminous deposit, uranium deposit, uranium, nuclear fuel.

PURPOSE AND COVERAGE: This book is intended for readers specializing in the geology of ore deposits, in particular for those concerned with atomic raw materials, and also for students of higher-education institutions. In the book, for the first time in Soviet and foreign literatures, the epigenetic theory of uranium-deposit formation is expounded. Many Soviet and foreign source materials

Card 1/4

have been used in this book, and some of the investigations carried out by the present authors are published in this book for the first time. Several names of Soviet scientists working in this field are mentioned. V. A. Uspenskiy collaborated on Ch. X, and M. A. Viselkina on Ch. III. The authors thank A. A. Saukov, deceased, Corresponding Member Academy of Sciences USSR, and F. I. Vol'fson, D. G. Sapozhnikov, V. I. Cerasimovskiy, M. F. Stralkin, G. S. Gritsayenko, and I. P. Kushnarev, Doctors of Geologico-Mineralogic Sciences; V. I. Danchev, Candidate of Geologico-Mineralogic Sciences, and N. A. Volokovykh. There are about 12 pages of references of which about 3/4 are Soviet.

TABLE OF CONTENTS [abridged]:

L 50199-65
AM5014982

Card 3/4

L 50199-65
AM5014982 O

Ch. XI. On surface uranium accumulations in regions with arid climate -- 232

Ch. XII. Zone of oxidation in epigenetic deposits -- 239

Conclusion -- 275

References -- 309

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OTHER: 118

Card 4/4